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EXAMINER

COLBERT, ELLA

ART UNIT	PAPER NUMBER
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3624

DATE MAILED: 10/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/416,414

Applicant(s)

BHANDARI ET AL.

Examiner

Ella Colbert

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 29-96 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 29-96 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other:

DETAILED ACTION

1. Claims 29-96 are pending. Claims 29, 34, 35, 37, 39, 50, 54, 55, 57, 62, 66, 67, 76, 93, 94, and 96 have been amended in this communication filed 08/19/03 entered as Amendment B, paper no. 15 and Extension of Time, paper no. 14.
2. The Declaration pursuant to 37 C.F.R. §1.31 filed 08/19/03 has been considered and entered as paper no. 16.
3. The Objection to the drawings has been overcome by Applicants' amendment to the claims to be in agreement with the drawings and is hereby withdrawn.
4. The Objection to the Specification has been overcome by Applicants' amendment to the claims to be in agreement with the Specification.
5. The 35 U.S.C. 112 second rejection for claims 29, 37, 39, 50, 54, 55, 57, 62, 63, 65-67, 76, 94, and 96 was addressed as having been overcome in the Office Action of 03/12/03.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
7. Claims 32, 33, 35, 38, 47, 48, 57, 60, 63, 66, 68, 70, 75, 76, 93, 94, and 96 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 32 recites "... associated with said of related queries ...". This claim limitation is not clear to the Examiner. Claim 60 has a similar problem. Do Applicants' mean "... associated with said related queries ..." or "associated with said

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set of related queries ...”? Claims 33, 35, 36, 38, 47, 48, 63, 64, and 66 are conditional statements. It is not understood in claim 33 what step or step would be performed “if it is determined that more than one query in the set of related queries has the greatest-valued result.” Do Applicants’ mean a list of queries would be generated ...”? Claims 35, 36, 38, 47, 48, 63, 64, and 66 have a similar issue.

Claims 57, 76, 93, and 96 are rejected for the following: Claim 57 recites “Apparatus for finding queries ...”. It is not clear what Applicants’ consider the “Apparatus to be for finding queries. Something appears to be missing from the claim language. Claims 76, 93, and 96 have a similar issue.

Claims 63, 66, 68, 70, 75, and 94 are rejected for the following: Claim 63 recites “... said device for determining to determine queries ...”. This claim limitation appears to be redundant making the claim language unclear. Claims 66, 68, 70, 75, and 95 have a similar problem.

Claim Objections

8. Claims 31, 35, 59, 62, and 66 are objected to because of the following informalities: Claim 31 recites “... one computation defines relationship between” This would be better recited “... one computation defines a relationship ...”. Claim 35 (f) recites “... to end of said list ...”. This would be better recited “... to the end of said list ...”. Claim 59 recites “... computation defines relationship ...”. This would be better recited “... computation defines a relationship ...”. Claim 62, line 5 recites “...elements for common ...”. This would be better recited “... elements in common ...”. Claim 66, line 6 recites “... least one computation and share one or more elements in

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common ...". This would be better recited "... least one computation and sharing one or more elements in common ...". Appropriate correction is required.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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11. As a preliminary matter the Examiner strongly suggests adding the following to the claims: Claim 29, "A computer implemented method of finding queries ..., comprising the steps of: receiving at the computer a user query consisting of at least one computation and an attribute-valued string having, ... ", claim 50 to recite "A computer implemented method ... comprising the steps of: generating at the computer a pre-computed greatest-valued and pre-computed least-valued lists ...", and claim 54 recite "A computer implemented method ..., comprising the steps of: (a) receiving at the computer a user query consisting of".

12. Claims 29-40, 48-51, 54-68, 76, 77, and 93-96 are rejected under 35 U.S.C. 103(a) as being unpatentable over (US 6,044,366) Graffe et al, hereafter Graffe in view of Adar et al, hereafter Adar.

With respect to claim 29, Graffe teaches, receiving a user query consisting of at least one computation and an attribute-value list having one or more elements, each element being associated with an attribute having a value assigned by a user or a user process (col. 6, lines 34-55 and col. 9, lines 8-55); determining queries in a plurality of queries having the at least one computation and sharing one or more elements in common with the user query to provide a set of related queries (col. 9, Table 7 and Table 8-plurality of queries and computation); and computing a result of the at least one computation for the attribute-value list associated with each query in the set of related queries (col. 11, lines 1-34). Graffe fails to teach, comparing the results associated with the set of related queries to determine one or more queries having the greatest-valued result, or one or more queries having the least-valued result.

Adar teaches, comparing the results associated with the set of related queries to determine one or more queries (col. 2, lines 47-65 and col. 9, lines 7-17). It would have been obvious to one having ordinary skill in the art at the time the invention was made to compare the results associated with the set of related queries to determine one or more queries having the greatest-valued result, or one or more queries having the least-valued result and to modify in Graffe because such a modification would allow Graffe to make a comparison and to perform a computation to arrive at either a greatest-value or a least value attribute.

With respect to claims 30 and 58, Graffe teaches, selecting the at least one computation from a plurality of computations in response to a user or user process input (col. 3, lines 1-25); selecting one or more attributes from a plurality of attributes in response to the user input (col. 5, lines 47-66 and col. 6, lines 1-32); and selecting a value for each attribute selected in response to the user input to form an element (col. 8, lines 1-16 and Table 6).

With respect to claims 31 and 59, Graffe teaches, wherein the at least one computation defines a relationship between the plurality of queries and a plurality of results (col. 8, lines 25-53 and col. 9, lines 1-6).

With respect to claims 32 and 60, Graffe teaches, wherein the results associated with the related queries are numeric results (col. Col. 9, lines 36-62).

With respect to claims 33 and 61, Graffe teaches, comprising the step of selecting one query as the query having the greatest-valued result if it is determined

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that more than one query in the set of related queries has the greatest-valued result (col. 15, lines 12-41).

With respect to claims 34 and 62, Graffe teaches, the step of generating a list of queries having the at least one computation, each query being associated with an attribute-value list having the greatest-valued result of all queries in the plurality sharing one or more elements in common with a preceding query or succeeding query in the list of queries (col. 9, lines 8-58).

With respect to claims 35, 37, & 63, Graffe teaches, the list of queries yields a non-decreasing succession of numeric results and wherein the step of generating a list comprises the steps of: (a) adding the query in the set of related queries having the greatest-valued result as a last query in the list of queries (col. 10, lines 30-65); and (b) determining queries in said plurality of queries having said at least one computation and sharing one or more elements in common with said last query to provide a set of queries related to said last query (col. 11, lines 1-63); (f) adding the query having the greatest-valued result if to the end of said list of queries as a new last query if it is determined that said new last query is not equivalent to said last query (col. 10, lines 30-65, col. 14, lines 43-66, and col. 15, lines 1-30); and (g) repeating steps (b) through (f) until there is no query in the plurality of queries having a result greater than the last query and sharing one or more elements in common with the last query (col. 10, lines 30-65, col. 11, lines 1-63, col. 14, lines 43-66, and col. 15, lines 1-30).

With respect to claim 37, Graffe teaches, the step of generating a list of queries having said at least one computation, each query being associated with an attribute-

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valued string having the least-valued result of all queries in said plurality of queries sharing one or more elements in common with a preceding query or a succeeding query in said list of queries (col. 8, lines 58-67).

These claims dependent are also rejected for the similar rationale given for claims 29 & 33.

With respect to claims 36 and 64, Graffe teaches, comprising the step of selecting one query as the query having the least-valued result if it is determined that more than one query in the set of related queries has the least valued result (col. 3, lines 42-66 and col. 8, lines 17-29).

These dependent claims are also rejected for the similar rational as given above for claim 33.

With respect to claims 37 and 65, these dependent claims are rejected for the similar rationale as given above for claim 35.

With respect to claims 38, 54, 66, 93, & 96, these claims are rejected for the similar rationale given for claim 35.

With respect to claims 39, 55, 67, and 94, these claims are rejected for the similar rationale as given above for claims 29 and 35.

With respect to claims 40, 56, 68, and 95, Graffe teaches, wherein the step (d) further comprises the steps of determining whether the first query has the greatest-valued result or the least-valued result (col. 2, lines 47-65 and col. 9, lines 7-17). A query is known in the art for specifying the characteristics (criteria) used to guide the computer to the required information.

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With respect to claim 48, this dependent claim is rejected for the similar rationale given for claims 35, 38, & 39.

With respect to claim 49, this dependent claim is rejected for the similar rationale given for claims 35-37.

With respect to claims 50 and 76, these independent claims are rejected for the similar rationale given for claims 29 and 38.

With respect to claims 51 and 77, these dependent claims are rejected for the similar rationale given for claim 31.

With respect to claims 54, 93, and 96, these independent claims are rejected for the similar rationale given for claims 29, 35, and 39.

With respect to claim 57, Graffe teaches, a device for receiving a user query, a device for determining, a computing device, and a comparator for comparing (col. 12, lines 4-67 and col. 13, lines 1-42). This independent claim is rejected for the similar rationale given above for claim 29.

Claim Rejections - 35 USC § 103

13. Claims 41-47, 52-53, and 69-75 are rejected under 35 U.S.C. 103(a) as being unpatentable over Graffe et al, hereinafter Graffe in view of Adar et al, hereinafter Adar and further in view of (4,490,811) Yianilos et al, hereafter Yianilos.

With respect to claims 41 and 69, Graffe and Adar fail to teach, the step of generating pre-computed greatest-valued and pre-computed least-valued lists by pre-determining for each query in the plurality of queries whether each query has a greatest-valued result or a least-valued result for all queries in the plurality of queries

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having at least one computation and sharing one or more elements in common with each query.

Yianilos teaches, the step of generating pre-computed greatest-valued and pre-computed least-valued lists by pre-determining for each query in the plurality of queries whether each query has a greatest-valued result or a least-valued result for all queries in the plurality of queries having at least one computation and sharing one or more elements in common with each query (col. 19, lines 24-67 and col. 20, lines 1-22). It would have been obvious to one having ordinary skill in the art at the time the invention was made to generate pre-computed greatest-valued and pre-computed least-valued lists by pre-determining for each query in the plurality of queries whether each query has a greatest-valued result or a least-valued result for all queries in the plurality of queries having at least one computation and sharing one or more elements in common with each query and to modify in Graffe because such a modification would allow Graffe to rank the list to arrive at the greatest-valued and least-valued result of the queries.

With respect to claims 42, 70, & 75, Graffe and Adar fail to teach, determining whether any query in the set of related queries is in the pre-computed greatest-valued list to provide a set of max queries and determining whether any query in the set of related queries is in the pre-computed least-valued list to provide a set of min queries. Yianilos teaches, determining whether any query in the set of related queries is in the pre-computed greatest-valued list to provide a set of max queries (col. 5, lines 1-26) and determining whether any query in the set of related queries is in the pre-computed least-valued list to provide a set of min queries (col. 5, lines 29-46). It would have been

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obvious to one having ordinary skill in the art at the time the invention was made to determine whether any query in the set of related queries is in the pre-computed greatest-valued list to provide a set of max queries and determining whether any query in the set of related queries is in the pre-computed least –valued list to provide a set of min queries and to modify in Graffe because such a modification would allow Graffe to have a ranked list of the most similar indicia and to compare similarity values to arrive at the greatest-valued list and least-valued list to result in a set of min queries.

With respect to claims 43 and 71, Graffe and Adar fail to teach, the step of displaying the user query and the result of the user query along with the greatest-valued result and one or more queries having the greatest-valued result.

Yianilos teaches, the step of displaying the user query and the result of the user query along with the greatest-valued result and one or more queries having the greatest-valued result (col. 19, lines 29-68 and col. 20, lines 1-22 (display) “appear”. It would have been obvious to one having ordinary skill in the art at the time the invention was made to display the user query and the result of the user query along with the greatest-valued result and one or more queries having the greatest-valued result and to modify in Graffe because such a modification would allow Graffe to have the query ranked according to the greatest-valued result and to have the highest ranking records appear (displayed).

With respect to claims 44 and 72, Graffe and Adar fail to teach, the step of displaying further displays the least-valued result and one or more queries having the least-valued result.

Yianilos teaches, the step of displaying further displays the least-valued result and one or more queries having the least-valued result (col. 23, lines 24-50 (display) "observe." It would have been obvious to one having ordinary skill in the art at the time the invention was made to display further displays of the least-valued result and one or more queries having the least-valued result and to modify in Graffe because such a modification would allow Graffe to process one query at the time and the value of each letter in a fixed order that is before the user to arrive at a least-valued result.

With respect to claims 45 and 73, Graffe and Adar fail to teach, the step of displaying the user query and the result of the user query along with each query and the corresponding greatest-valued result in the list.

Yianilos teaches, the step of displaying the user query and the result of the user query along with each query and the corresponding greatest-valued result in the list (col. 2, lines 31-38 and col. 27, lines 32-55). It would have been obvious to one having ordinary skill in the art at the time the invention was made to display the user query and the result of the user query along with the corresponding greatest-valued result in the list and to modify in Graffe because such a modification would allow Graffe to arrive at a result of the greatest-value in the list in the queries.

With respect to claims 46 and 74, these dependent claims are rejected for the similar rationale given for claims 44 and 45.

With respect to claim 47, this dependent claim is rejected for the similar rationale given for claims 43 and 45.

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With respect to claims 52 and 78, these dependent claims are rejected for the similar rationale given for claims 42, 43, & 45.

With respect to claims 53 and 79, these dependent claims are rejected for the similar rationale given for claims 42 & 44.

14. Claims 79-92 are rejected under 35 U.S.C. 103(a) as being unpatentable over Graffe et al, hereinafter, Graffe in view of (US 5,802,515) Adar et al, hereinafter Adar.

With respect to claim 79, Graffe fails to teach, the step of displaying displays each query and the corresponding least-valued result in the set of min queries.

Adar teaches, the step of displaying displays each query and the corresponding least-valued result in the set of min queries (col. 3, lines 51-60). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a step or displaying displays for each query and the corresponding least-valued result in the set of min queries and to modify in Graffe because such a modification would allow Graffe to compute a rank value for each of the documents in the set of queries, the number of queries and the lowest rank value to arrive at a result.

With respect to claims 80, 81, 82, 84, & 86-92, Graffe fails to teach, a computing device operable to compute results for sports data, call center data, customer relationship management data, multimedia data, tennis data, soccer data, golf data, football data, baseball data, and cricket data. Adar teaches, a computing device operable to compute results for sports data, call center data, customer relationship management data, multimedia data, tennis data, soccer data, golf data, football data, baseball data, and cricket data (col. 4, lines 58-65 and col. 9, lines 7-17). Sports data,

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call center data, customer relationship management data, multimedia data, tennis data, soccer data, golf data, football data, baseball data, and cricket data are merely attributes to obtain a result of a computation.

With respect to claim 83, Graffe fails to teach, the computing device is operable to compute results for banking data. Adar teaches, the computing device is operable to compute results for banking data (col. 1, lines 26-30). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a computing device operable to compute results for banking data and to modify in Graffe because such a modification would allow Graffe to retrieve large amounts of computed information from databases.

With respect to claim 85, Graffe fails to teach, the computing device is operable to compute results for textual data. Adar teaches, the computing device is operable to compute results for textual data (col. 5, lines 2-17). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a computing device operable to compute results for textual data and to modify in Graffe because such a modification would allow Graffe to provide text to a text string processor from a preexisting source with the text string processor receiving the input text string.

Response to Arguments

15. Applicant's arguments with respect to claims 29-96 have been considered and a new grounds of rejection has been set forth. However, as a preliminary matter the Examiner would like to address Applicants' argument on page 18, paragraph 2.

Applicants' argue: the present invention operates on the principle of expanding the number of data sets (expand the number of records) to be considered so that the final result is the best possible result, i.e., a global maximum and minimum has been considered but in response to Applicants' argument that the references fail to show certain features of applicants' invention, it is noted that the features upon which applicant relies (i.e., global maximum or minimum) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to Applicants' disclosure.

Agrawal et al (US 5,926,820) disclosed querying, maximum and minimum value, and attributes.

Byrd, Jr. et al (US 5,826,260) disclosed querying, min, max, and values.

Chang (US 5,875,285) disclosed data mining, attributes, and querying.

Borgida et al (US 5,659,724) disclosed querying and attribute values.

Anwar (US 5,767,854) disclosed analysis of attribute data.

Schwartz (US 5,584,024) disclosed SQL queries and attributes.


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Inquiries

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ella Colbert whose telephone number is 703-308-7064. The examiner can normally be reached on Monday-Thursday from 6:30 am -5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vincent Millin can be reached on 703-308-1038. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.


E. Colbert
October 28, 2003